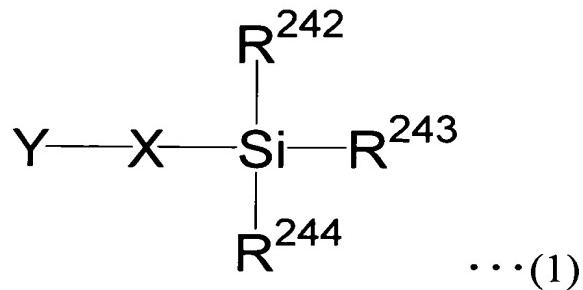


CLAIMS

1. A carbon nanotube composition that contains a conducting polymer (a), a solvent (b) and carbon nanotubes (c).
2. A carbon nanotube composition that contains a heterocyclic compound trimer (i), a solvent (b) and carbon nanotubes (c).
3. A carbon nanotube composition according to claim 1 or claim 2, wherein the carbon nanotube composition additionally contains a high molecular weight compound (d).
4. A carbon nanotube composition according to any one of claims 1 to 3, wherein the carbon nanotube composition additionally contains a basic compound (e).
5. A carbon nanotube composition according to any one of claims 1 to 4, wherein the carbon nanotube composition additionally contains a surfactant (f).
6. A carbon nanotube composition according to any one of claims 1 to 5, wherein the carbon nanotube composition additionally contains a silane coupling agent (g) represented by the following formula (1):



(in the formula (1), wherein R²⁴², R²⁴³ and R²⁴⁴ respectively and independently represent a group selected from the group consisting of hydrogen, a linear or branched alkyl group having 1 to 6 carbon atoms, linear or branched alkoxy group having 1 to 6 carbon atoms, amino group, acetyl group, phenyl group and halogen group, X represents the following:



l and m represent values from 0 to 6, and Y represents a group selected from the group consisting of a hydroxyl group, thiol group, amino group, epoxy group and epoxycyclohexyl group).

7. A carbon nanotube composition according to any one of claims 1 to 6, wherein the carbon nanotube composition additionally contains a colloidal silica (h).

8. A carbon nanotube composition according to any one of claims 1, and 3 to 7, wherein the conducting polymer (a) is a water soluble conducting polymer.

9. A carbon nanotube composition according to claim 8, wherein the water soluble conducting polymer has at least one of a sulfonic acid group and a carboxyl group.

10. A carbon nanotube composition according to claim 9, wherein the water soluble conducting polymer having at least one of a sulfonic acid group and a carboxyl group is a water soluble conducting polymer that contains 20 to 100% of at least one type of the repeating units selected from the following formulas (2) to (10) relative to the total number of repeating units throughout the entire polymer:



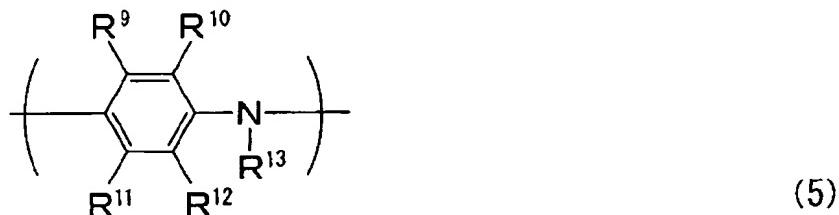
(in the formula (2), wherein R¹ and R² are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, and at least one of R¹ and R² is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH);



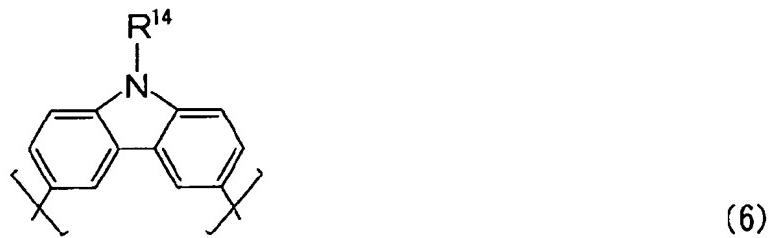
(in the formula (3), wherein R³ and R⁴ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, and at least one of R³ and R⁴ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH);



(in the formula (4), wherein R⁵ to R⁸ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, and at least one of R⁵ to R⁸ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH);



(in the formula (5), wherein R⁹ to R¹³ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, and at least one of R⁹ to R¹³ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH);

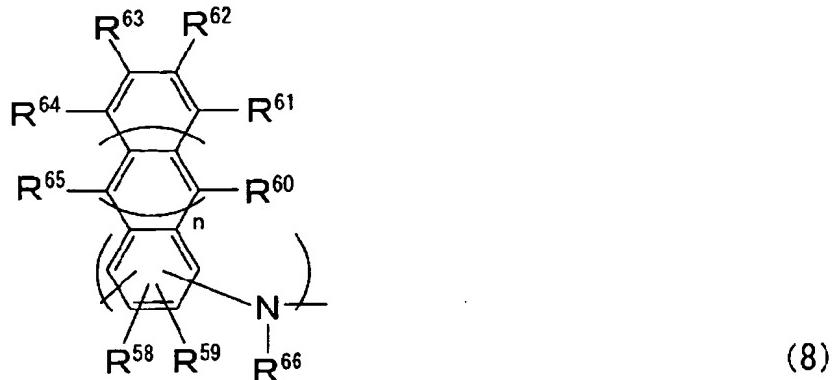


(in the formula (6), wherein R¹⁴ is selected from the group consisting of -SO₃⁻, -SO₃H, -R⁴²SO₃⁻, -R⁴²SO₃H, -COOH and -R⁴²COOH, where R⁴² represents an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms);

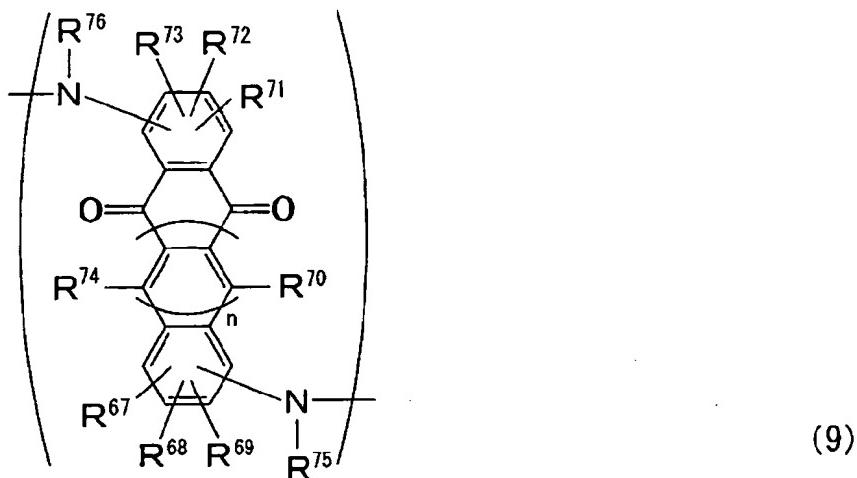


(in the formula (7), wherein R⁵² to R⁵⁷ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, at least one of R⁵² to R⁵⁷ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH, Ht represents a heteroatom group selected from the group consisting of NR⁸², S, O, Se and Te, where R⁸² represents hydrogen, a linear or branched alkyl group having 1 to 24 carbon atoms, or a substituted or non-substituted aryl group having 1 to 24 carbon atoms, the hydrocarbon chains of R⁵² to R⁵⁷ mutually bond at arbitrary locations and may form a bivalent chain that forms at least one cyclic structure of saturated or unsaturated hydrocarbons of a 3 to

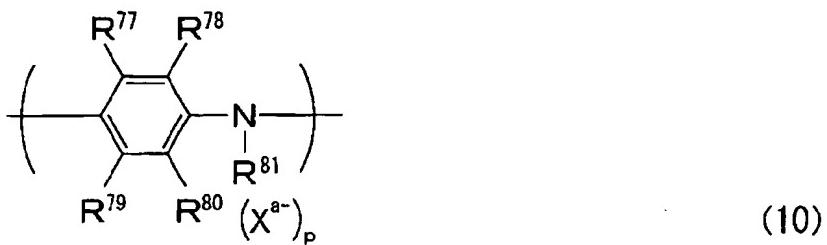
7-member ring together with the carbon atoms substituted by the groups, the cyclic bonded chain formed in this manner may contain a carbonyl ether, ester, amide, sulfide, sulfinyl, sulfonyl or imino bond at arbitrary locations, and n represents the number of condensed rings sandwiched between a hetero ring and a benzene ring having substituents R⁵³ to R⁵⁶, and is 0 or an integer of 1 to 3);



(in the formula (8), wherein R⁵⁸ to R⁶⁶ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, at least one of R⁵⁸ to R⁶⁶ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH, and n represents the number of condensed rings sandwiched between a benzene ring having substituents R⁵⁸ and R⁵⁹ and a benzene ring having substituents R⁶¹ to R⁶⁴, and is 0 or an integer of 1 to 3);



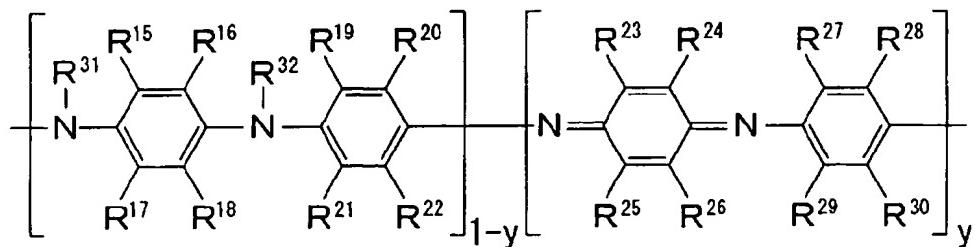
(in the formula (9), wherein R⁶⁷ to R⁷⁶ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, at least one of R⁶⁷ to R⁷⁶ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH, and n represents the number of condensed rings sandwiched between a benzene ring having substituents R⁶⁷ to R⁶⁹ and a benzoquinone ring, and is 0 or an integer of 1 to 3); and,



(in the formula (10), wherein R⁷⁷ to R⁸¹ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F,

-Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group or alkylene, arylene having 1 to 24 carbon atoms or an aralkylene group having 1 to 24 carbon atoms, at least one of R⁷⁷ to R⁸¹ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH, Xa⁻ is at least one type of anion selected from the group of anions having a valence of 1 to 3 consisting of a chlorine ion, bromine ion, iodine ion, fluorine ion, nitrate ion, sulfate ion, hydrogensulfate ion, phosphate ion, borofluoride ion, perchlorate ion, thiocyanate ion, acetate ion, propionate ion, methane sulfonate ion, p-toluene sulfonate ion, trifluoroacetate ion and trifluoromethane sulfonate ion, a represents the ion valence of X and is an integer of 1 to 3, and p represents the doping ratio and has a value of 0.001 to 1).

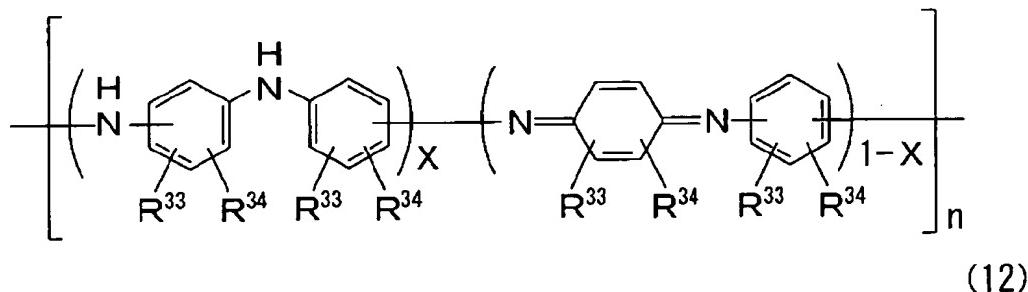
11. A carbon nanotube composition according to claim 9, wherein the water soluble conducting polymer having at least one of a sulfonic acid group and a carboxyl group is a water soluble conducting polymer that contains 20 to 100% of the repeating unit represented by the following formula (11) relative to the total number of repeating units throughout the entire polymer:



(11)

(in the formula (11), wherein y represents an arbitrary number such that $0 < y < 1$, R^{15} to R^{32} are respectively and independently selected from the group consisting of H, $-SO_3^-$, $-SO_3H$, $-R^{35}SO_3^-$, $-R^{35}SO_3H$, $-OCH_3$, $-CH_3$, $-C_2H_5$, F, Cl, Br, I, $-N(R^{35})_2$, $-NHCOR^{35}$, $-OH$, $-O^-$, $-SR^{35}$, $-OR^{35}$, $-OCOR^{35}$, $-NO_2$, $-COOH$, $-R^{35}COOH$, $-COOR^{35}$, $-COR^{35}$, $-CHO$ and $-CN$, where R^{35} represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, and at least one of R^{15} to R^{32} is a group selected from the group consisting of $-SO_3^-$, $-SO_3H$, $-R^{35}SO_3^-$, $-R^{35}SO_3H$, $-COOH$ and $-R^{35}COOH$).

12. A carbon nanotube composition according to claim 9, wherein the water soluble conducting polymer having at least one of a sulfonic acid group and a carboxyl group is represented by the following formula (12):



(in the formula (12), wherein R^{33} represents one group selected from the group consisting of a sulfonic acid group, carboxyl group, their alkaline metal salts, ammonium salts and substituted ammonium salts, R^{34} represents one group selected from the group consisting of a methyl group, ethyl group, n-propyl group, iso-propyl group, n-butyl group, iso-butyl group, sec-butyl group, tert-butyl group, dodecyl group, tetracosyl group, methoxy group, ethoxy group, n-propoxy group, iso-butoxy group, sec-butoxy group,

tert-butoxy group, heptoxy group, hexoxy group, octoxy group, dodecoxy group, tetracoxy group, fluoro group, chloro group and bromo group, X represents an arbitrary number such that $0 < X < 1$, and n represents the degree of polymerization and has a value of 3 or more).

13. A carbon nanotube composition according to claim 9, wherein the water soluble conducting polymer having at least one of a sulfonic acid group and a carboxyl group is a water soluble conducting polymer obtained by polymerizing at least one of type of acidic group-substituted aniline represented by the following formula (13), its alkaline metal salt, ammonium salt and substituted ammonium salt, with an oxidizing agent in a solution containing a basic compound:



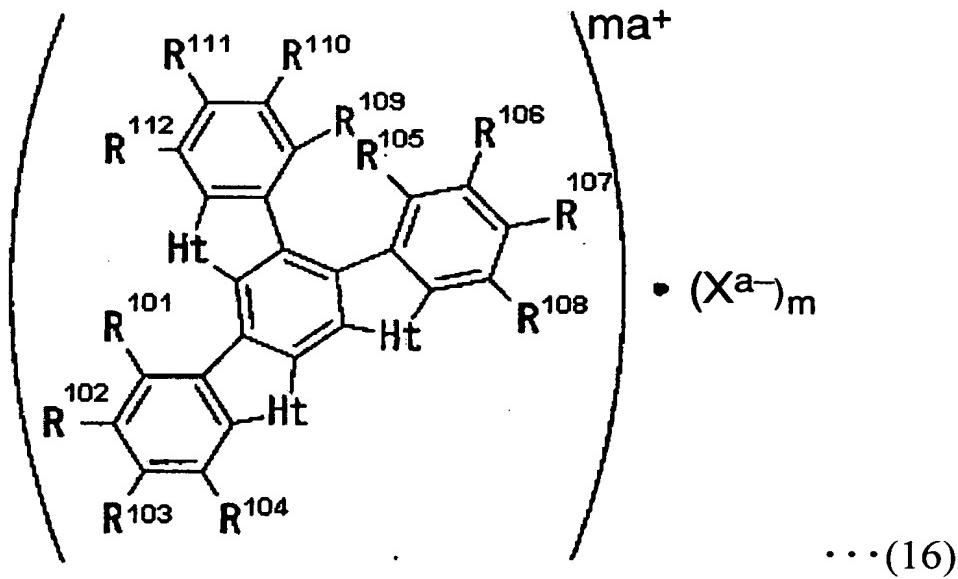
(in the formula (13), wherein R³⁶ to R⁴¹ are respectively and independently selected from the group consisting of H, -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -OCH₃, -CH₃, -C₂H₅, -F, -Cl, -Br, -I, -N(R³⁵)₂, -NHCOR³⁵, -OH, -O⁻, -SR³⁵, -OR³⁵, -OCOR³⁵, -NO₂, -COOH, -R³⁵COOH, -COOR³⁵, -COR³⁵, -CHO and -CN, where R³⁵ represents an alkyl, aryl or aralkyl group having 1 to 24 carbon atoms or an alkylene, arylene or aralkylene group having 1 to 24 carbon atoms, and at least one of R³⁶ to R⁴¹ is a group selected from the group consisting of -SO₃⁻, -SO₃H, -R³⁵SO₃⁻, -R³⁵SO₃H, -COOH and -R³⁵COOH).

14. A carbon nanotube composition according to claim 9, wherein the water soluble

conducting polymer having at least one of a sulfonic acid group and a carboxyl group is a water soluble conducting polymer obtained by polymerizing at least one type of alkoxy group-substituted aminobenzene sulfonic acid, its alkaline metal salt, ammonium salt and substituted ammonium salt, with an oxidizing agent in a solution containing a basic compound.

15. A carbon nanotube composition according to claim 9, wherein the water soluble conducting polymer having at least one of a sulfonic acid group and a carboxyl group is polyethylene dioxythiophene polystyrene sulfate.

16. A carbon nanotube composition according to any one of claims 2 to 7, wherein the heterocyclic compound trimer (i) is a heterocyclic compound trimer represented by the following formula (16):



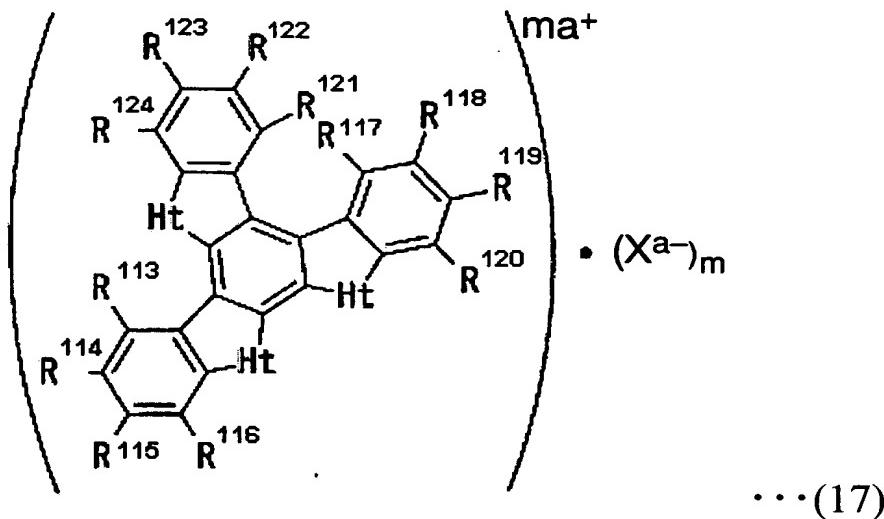
(in the formula (16), wherein R¹⁰¹ to R¹¹² are substituents respectively and independently selected from the group consisting of hydrogen, a linear or branched alkyl group having 1

to 24 carbon atoms, a linear or branched alkoxy group having 1 to 24 carbon atoms, linear or branched acyl group having 2 to 24 carbon atoms, aldehyde group, carboxyl group, linear or branched carboxylic ester group having 2 to 24 carbon atoms, sulfonic acid group, linear or branched sulfonic ester group having 1 to 24 carbon atoms, cyano group, hydroxyl group, nitro group, amino group, amido group, dicyanovinyl group, alkyl (linear or branched alkyl group having 1 to 8 carbon atoms) oxycarbonylcyanovinyl group, nitrophenylcyanovinyl group and halogen group;

Ht represents a heteroatom group selected from the group consisting of NR¹⁵⁴, S, O, Se and Te, and R¹⁵⁴ represents a substituent selected from the group consisting of hydrogen and a linear or branched alkyl group having 1 to 24 carbon atoms;

X^{a-} represents at least one type of anion selected from the group consisting of anions having a valence of 1 to 3 consisting of a chlorine ion, bromine ion, iodine ion, fluorine ion, nitrate ion, sulfate ion, hydrogensulfate ion, phosphate ion, borofluoride ion, perchlorate ion, thiocyanate ion, acetate ion, propionate ion, methane sulfonate ion, p-toluene sulfonate ion, trifluoroacetate ion and trifluoromethane sulfonate ion; a represents the ion valence of X and is an integer of 1 to 3; and, m represents the doping ratio and has a value of 0 to 3.0).

17. A carbon nanotube composition according to any one of claims 2 to 7, wherein the heterocyclic compound trimer (i) is a heterocyclic compound trimer represented by the following general formula (17):



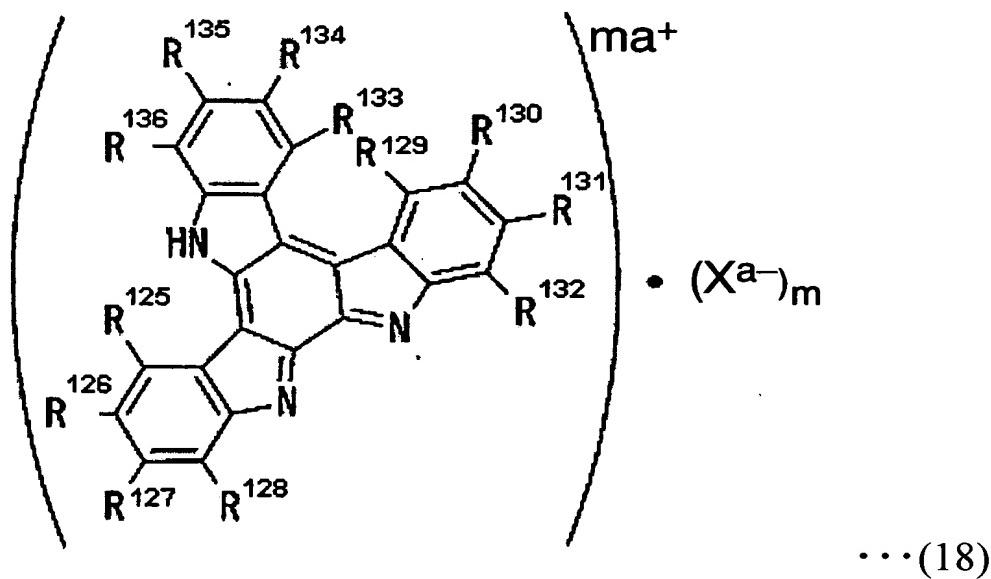
(in the formula (17), wherein R¹¹³ to R¹²⁴ represent substituents respectively and independently selected from the group consisting of hydrogen, a linear or branched alkyl group having 1 to 24 carbon atoms, linear or branched alkoxy group having 1 to 24 carbon atoms, linear or branched acyl group having 2 to 24 carbon atoms, aldehyde group, carboxyl group, linear or branched carboxylic ester group having 2 to 24 carbon atoms, sulfonic acid group, linear or branched sulfonic ester group having 1 to 24 carbon atoms, cyano group, hydroxyl group, nitro group, amino group, amido group, dicyanovinyl group, alkyl (linear or branched alkyl group having 1 to 8 carbon atoms) oxycarbonylcyanovinyl group, nitrophenylcyanovinyl group and halogen group; at least one of R¹¹³ to R¹²⁴ is a cyano group, nitro group, amide group, halogen group, sulfonic acid group, and carboxyl group;

Ht represents a heteroatom group selected from the group consisting of NR¹⁵⁴, S, O, Se and Te, and R¹⁵⁴ represents a substituent selected from the group consisting of hydrogen and a linear or branched alkyl group having 1 to 24 carbon atoms;

X^{a-} represents at least one type of anion selected from the group consisting of anions having a valence of 1 to 3 consisting of a chlorine ion, bromine ion, iodine ion, fluorine ion, nitrate ion, sulfate ion, hydrogen sulfate ion, phosphate ion, borofluoride ion,

perchlorate ion, thiocyanate ion, acetate ion, propionate ion, methane sulfonate ion, p-toluene sulfonate ion, trifluoroacetate ion and trifluoromethane sulfonate ion; a represents the ion valence of X and is an integer of 1 to 3; and, m represents the doping ratio and has a value of 0 to 3.0).

18. A carbon nanotube composition according to any one of claims 2 to 7, wherein the heterocyclic compound trimer (i) is a heterocyclic compound trimer represented by the following general formula (18):

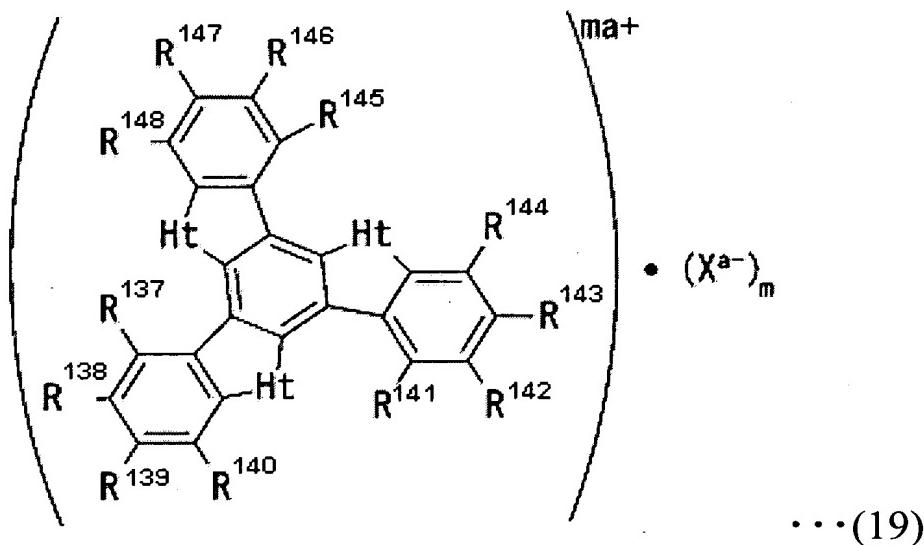


(in the formula (18), wherein R¹²⁵ to R¹³⁶ are substituents respectively and independently selected from the group consisting of hydrogen, a linear or branched alkyl group having 1 to 24 carbon atoms, linear or branched alkoxy group having 1 to 24 carbon atoms, linear or branched acyl group having 2 to 24 carbon atoms, aldehyde group, carboxylic acid group and its alkaline metal salt, ammonium salt and substituted ammonium salt, linear or branched carboxylic ester group having 2 to 24 carbon atoms, sulfonic acid group and its alkaline metal salt, ammonium salt and substituted ammonium salt, linear or branched

sulfonic ester group having 1 to 24 carbon atoms, cyano group, hydroxyl group, nitro group, amino group, amido group, dicyanovinyl group, alkyl (linear or branched alkyl group having 1 to 8 carbon atoms)oxycarbonylcyanovinyl group, nitrophenylcyanovinyl group and halogen group;

X^{a-} represents at least one type of anion selected from the group consisting of anions having a valence of 1 to 3 consisting of a chlorine ion, bromine ion, iodine ion, fluorine ion, nitrate ion, sulfate ion, hydrogen sulfate ion, phosphate ion, borofluoride ion, perchlorate ion, thiocyanate ion, acetate ion, propionate ion, methane sulfonate ion, p-toluene sulfonate ion, trifluoroacetate ion and trifluoromethane sulfonate ion; a represents the ion valence of X and is an integer of 1 to 3; and, m represents the doping ratio and has a value of 0 to 3.0).

19. A carbon nanotube composition according to any one of claims 2 to 7, wherein the heterocyclic compound trimer (i) is a heterocyclic compound trimer represented by the following general formula (19):



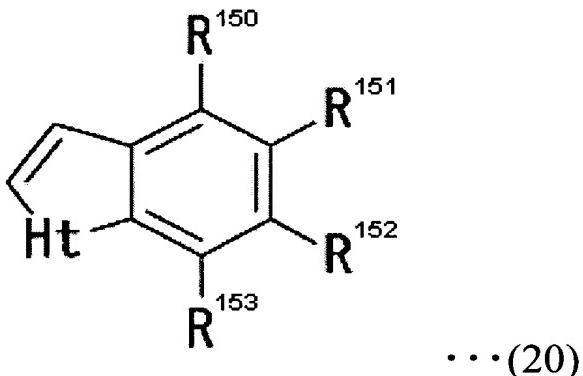
(in the formula (19), wherein R¹³⁷ to R¹⁴⁸ are substituents respectively and independently

selected from the group consisting of hydrogen, a linear or branched alkyl group having 1 to 24 carbon atoms, linear or branched alkoxy group having 1 to 24 carbon atoms, linear or branched acyl group having 2 to 24 carbon atoms, aldehyde group, carboxyl group, linear or branched carboxylic ester group having 2 to 24 carbon atoms, sulfonic acid group, linear or branched sulfonic ester group having 1 to 24 carbon atoms, cyano group, hydroxyl group, nitro group, amino group, amido group, dicyanovinyl group, alkyl (linear or branched alkyl group having 1 to 8 carbon atoms)oxycarbonylcyanovinyl group, nitrophenylcyanovinyl group and halogen group;

Ht represents a heteroatom group selected from the group consisting of NR¹⁵⁴, S, O, Se and Te, and R¹⁵⁴ represents a substituent selected from the group consisting of hydrogen and a linear or branched alkyl group having 1 to 24 carbon atoms;

X^{a-} represents at least one type of anion selected from the group consisting of anions having a valence of 1 to 3 consisting of a chlorine ion, bromine ion, iodine ion, fluorine ion, nitrate ion, sulfate ion, hydrogen sulfate ion, phosphate ion, borofluoride ion, perchlorate ion, thiocyanate ion, acetate ion, propionate ion, methane sulfonate ion, p-toluene sulfonate ion, trifluoroacetate ion and trifluoromethane sulfonate ion; a represents the ion valence of X and is an integer of 1 to 3; and, m represents the doping ratio and has a value of 0 to 3.0).

20. A carbon nanotube composition according to any one of claims 2 to 7, wherein the heterocyclic compound trimer (i) is a heterocyclic compound trimer obtained by reacting at least one type of heterocyclic compound represented by the following general formula (20) in a reaction mixture containing at least one type of oxidizing agent and at least one type of solvent:



(in the formula (20), wherein R¹⁵⁰ to R¹⁵³ are substituents respectively and independently selected from the group consisting of hydrogen, a linear or branched alkyl group having 1 to 24 carbon atoms, linear or branched alkoxy group having 1 to 24 carbon atoms, linear or branched acyl group having 2 to 24 carbon atoms, aldehyde group, carboxyl group, linear or branched carboxylic ester group having 2 to 24 carbon atoms, sulfonic acid group, linear or branched sulfonic ester group having 1 to 24 carbon atoms, cyano group, hydroxyl group, nitro group, amino group, amido group, dicyanovinyl group, alkyl (linear or branched alkyl group having 1 to 8 carbon atoms)oxycarbonylcyanovinyl group, nitrophenylcyanovinyl group and halogen group; and,

Ht represents a heteroatom group selected from the group consisting of NR¹⁵⁴, S, O, Se and Te, and R¹⁵⁴ represents a substituent selected from the group consisting of hydrogen and a linear or branched alkyl group having 1 to 24 carbon atoms).

21. A carbon nanotube composition according to any one of claims 2 to 7, wherein the heterocyclic compound trimer (i) has a layered structure.

22. A production method of a carbon nanotube composition comprising: irradiating a carbon nanotube composition according to any one of claims 1 to 21 with ultrasonic

waves and mixing.

23. A composite comprising a base material, and a coated film composed of the carbon nanotube composition according to any one of claims 1 to 21 on at least one surface of the base material.
24. A production method of a composite comprising: coating the carbon nanotube composition according to any of claims 1 to 21 onto at least one surface of a base material, and forming a coated film by allowing to stand at room temperature or subjecting to heat treatment.
25. A production method of a composite according to claim 24, wherein the heat treatment is carried out within a temperature range of normal temperature to 250°C.